

## SEQUENCE LISTING

<110> St. Croix, Brad  
Kinzler, Kenneth W.  
Vogelstein, Bert

<120> MEMBRANE ASSOCIATED TUMOR ENDOTHELIUM  
MARKERS

<130> 001107.00358

<150> 60/390,187

<151> 2002-06-21

<160> 10

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1909

<212> DNA

<213> Homo sapiens

<400> 1

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&lt;210&gt; 2

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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Met Tyr Gly Asn Ile Leu Cys Pro Thr Leu His Thr Leu Cys Thr Gln
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Ile Leu Tyr Cys Met Asn Tyr Ala Leu Ser Arg Ile Gln Cys Gln Gly
      20           25           30
Glu Leu Gly Glu Ile Asn Tyr Phe Asn Phe Phe Phe Ile Leu Tyr Lys
      35           40           45
Ala Met Asp Phe Ile Trp Leu Met Cys Ala Leu Tyr Thr Ser His Phe
      50           55           60
Asn Arg Met Glu Leu Leu Ile Ile Phe Gln Arg Val Ile Asp Met Gln
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Lys Phe Gln

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&lt;210&gt; 3

&lt;211&gt; 2064

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 3

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&lt;210&gt; 4

&lt;211&gt; 362

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4

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          20          25          30
Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser
          35          40          45
Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val
          50          55          60
Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His
65          70          75          80
Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr
          85          90          95
Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met
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Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu
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Phe Gly Ser Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu
          130         135         140
Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val
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Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser
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Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn
          180          185          190
Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp
          195         200         205
Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro
          210         215         220
Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser
225          230          235          240
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 325 330 335  
 Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr  
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&lt;210&gt; 5

&lt;211&gt; 4286

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

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&lt;210&gt; 6

&lt;211&gt; 436

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

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Pro	Thr	Lys	Thr	Leu	Trp	Pro	Lys	Gly	Ser	Asn	Ala	Ser	Leu	Ala	Arg
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6

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          100         105         110
Val Leu Gly Ile Ile Gly Asn Ser Thr Leu Leu Arg Ile Ile Tyr Lys
          115         120         125
Asn Lys Cys Met Arg Asn Gly Pro Asn Ile Leu Ile Ala Ser Leu Ala
          130         135         140
Leu Gly Asp Leu Leu His Ile Val Ile Asp Ile Pro Ile Asn Val Tyr
145          150         155         160
Lys Leu Leu Ala Glu Asp Trp Pro Phe Gly Ala Glu Met Cys Lys Leu
          165         170         175
Val Pro Phe Ile Gln Lys Ala Ser Val Gly Ile Thr Val Leu Ser Leu
          180         185         190
Cys Ala Leu Ser Ile Asp Arg Tyr Arg Ala Val Ala Ser Trp Ser Arg
          195         200         205
Ile Lys Gly Ile Gly Val Pro Lys Trp Thr Ala Val Glu Ile Val Leu
          210         215         220
Ile Trp Val Val Ser Val Val Leu Ala Val Pro Glu Ala Ile Gly Phe
225          230         235         240
Asp Ile Ile Thr Met Asp Tyr Lys Gly Ser Tyr Leu Arg Ile Cys Leu
          245         250         255
Leu His Pro Val Gln Lys Thr Ala Phe Met Gln Phe Tyr Lys Thr Ala
          260         265         270
Lys Asp Trp Trp Leu Phe Ser Phe Tyr Phe Cys Leu Pro Leu Ala Ile
          275         280         285
Thr Ala Phe Phe Tyr Thr Leu Met Thr Cys Glu Met Leu Arg Lys Lys
          290         295         300
Ser Gly Met Gln Ile Ala Leu Asn Asp His Leu Lys Gln Arg Arg Glu
305          310         315         320
Val Ala Lys Thr Val Phe Cys Leu Val Leu Val Phe Ala Leu Cys Trp
          325         330         335
Leu Pro Leu His Leu Ser Arg Ile Leu Lys Leu Thr Leu Tyr Asn Gln
          340         345         350
Asn Asp Pro Asn Arg Cys Glu Leu Leu Ser Phe Leu Leu Val Leu Asp
          355         360         365
Tyr Ile Gly Ile Asn Met Ala Ser Leu Asn Ser Cys Ile Asn Pro Ile
          370         375         380
Ala Leu Tyr Leu Val Ser Lys Arg Phe Lys Asn Cys Phe Lys Ala Gly
385          390         395         400
Pro His Val Gly Asn Lys Leu Val Met Leu Phe Ser Val Asn Ile Glu
          405         410         415
Cys Asp Gly Thr Val Asn Gln Asn Pro Thr Met Trp Pro Glu Arg Lys
          420         425         430
Ser Asn Asn Asn
          435

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&lt;210&gt; 7

&lt;211&gt; 8091

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 7

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&lt;210&gt; 8

&lt;211&gt; 2321

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

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20          25          30
Leu Ala Gly Pro Gly Ala Ala Ala Pro Pro Cys Leu Asp Gly Ser Pro
35          40          45
Cys Ala Asn Gly Gly Arg Cys Thr Gln Leu Pro Ser Arg Glu Ala Ala
50          55          60
Cys Leu Cys Pro Pro Gly Trp Val Gly Glu Arg Cys Gln Leu Glu Asp
65          70          75          80
Pro Cys His Ser Gly Pro Cys Ala Gly Arg Gly Val Cys Gln Ser Ser
85          90          95
Val Val Ala Gly Thr Ala Arg Phe Ser Cys Arg Cys Pro Arg Gly Phe

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Ser	Cys	Pro	Pro	Gly	Tyr	Gln	Gly	Arg	Ser	Cys	Arg	Ser	Asp	Val	Asp		
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Leu	Cys	Glu	Asn	Pro	Ala	Val	Pro	Cys	Ala	Pro	Ser	Pro	Cys	Arg	Asn		
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Asn	Glu	Cys	Leu	Ser	Gly	Pro	Cys	Arg	Asn	Gln	Ala	Thr	Cys	Leu	Asp		
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 Cys Glu Leu Leu Ser Pro Cys Thr Pro Asn Pro Cys Glu His Gly Gly  
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 Arg Cys Asp Pro Ala Cys Ser Ser Pro Ala Cys Leu Tyr Asp Asn Phe  
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 Lys Tyr Cys Ala Asp His Phe Ala Asp Gly Arg Cys Asp Gln Gly Cys  
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 Asn Thr Glu Glu Cys Gly Trp Asp Gly Leu Asp Cys Ala Ser Glu Val  
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 Pro Ala Leu Leu Ala Arg Gly Val Leu Val Leu Thr Val Leu Leu Pro  
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 Pro Glu Glu Leu Leu Arg Ser Ser Ala Asp Phe Leu Gln Arg Leu Ser  
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 Ala Ile Leu Arg Thr Ser Leu Arg Phe Arg Leu Asp Ala His Gly Gln  
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 Ala Met Val Phe Pro Tyr His Arg Pro Ser Pro Gly Ser Glu Pro Arg  
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 Ala Arg Arg Glu Leu Ala Pro Glu Val Ile Gly Ser Val Val Met Leu  
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 Phe Pro Asp Ala Gln Ser Ala Ala Asp Tyr Leu Gly Ala Leu Ser Ala  
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 Ser Leu His Lys Asp Val Ala Ser Gly His Lys Gly Arg Arg Glu Pro  
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 Val Gly Gln Asp Ala Leu Gly Met Lys Asn Met Ala Lys Gly Glu Ser  
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 Leu Met Gly Glu Val Ala Thr Asp Trp Met Asp Thr Glu Cys Pro Glu  
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 Ala Lys Arg Leu Lys Val Glu Glu Pro Gly Met Gly Ala Glu Glu Ala  
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 Val Asp Cys Arg Gln Trp Thr Gln His His Leu Val Ala Ala Asp Ile  
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 Arg Val Ala Pro Ala Met Ala Leu Thr Pro Pro Gln Gly Asp Ala Asp  
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 Ala Asp Gly Met Asp Val Asn Val Arg Gly Pro Asp Gly Phe Thr Pro  
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Glu Glu Asp Glu Ala Asp	Asp Thr Ser Ala Ser Ile Ile Ser Asp Leu	
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Ile Cys Gln Gly Ala Gln	Leu Gly Ala Arg Thr Asp Arg Thr Gly Glu	
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Thr Ala Leu His Leu Ala	Ala Arg Tyr Ala Arg Ala Asp Ala Ala Lys	1840
	1845	1850
Arg Leu Leu Asp Ala Gly	Ala Asp Thr Asn Ala Gln Asp His Ser Gly	1855
	1860	1865
Arg Thr Pro Leu His Thr	Ala Val Thr Ala Asp Ala Gln Gly Val Phe	1870
	1875	1880
Gln Ile Leu Ile Arg Asn	Arg Ser Thr Asp Leu Asp Ala Arg Met Ala	1885
	1890	1900
Asp Gly Ser Thr Ala Leu	Ile Leu Ala Ala Arg Leu Ala Val Glu Gly	
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Met Val Glu Glu Leu Ile	Ala Ser His Ala Asp Val Asn Ala Val Asp	1920
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Glu Leu Gly Lys Ser Ala	Leu His Trp Ala Ala Ala Val Asn Asn Val	1935
	1940	1945
Glu Ala Thr Leu Ala Leu	Leu Lys Asn Gly Ala Asn Lys Asp Met Gln	1950
	1955	1960
Asp Ser Lys Glu Glu Thr	Pro Leu Phe Leu Ala Ala Arg Glu Gly Ser	1965
	1970	1975
Tyr Glu Ala Ala Lys Leu	Leu Leu Leu Asp His Phe Ala Asn Arg Glu Ile	1980
1985	1990	1995
Thr Asp His Leu Asp Arg	Leu Pro Arg Asp Val Ala Gln Glu Arg Leu	2000
	2005	2010
His Gln Asp Ile Val Arg	Leu Leu Asp Gln Pro Ser Gly Pro Arg Ser	2015
	2020	2025
Pro Pro Gly Pro His Gly	Leu Gly Pro Leu Leu Cys Pro Pro Gly Ala	2030
	2035	2040
Phe Leu Pro Gly Leu Lys	Ala Ala Gln Ser Gly Ser Lys Lys Ser Arg	2045
	2050	2055
Arg Pro Pro Gly Lys Ala	Gly Leu Gly Pro Gln Gly Pro Arg Gly Arg	2060
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Gly Lys Lys Leu Thr Leu	Ala Cys Pro Gly Pro Leu Ala Asp Ser Ser	2080
	2085	2090
Val Thr Leu Ser Pro Val	Asp Ser Leu Asp Ser Pro Arg Pro Phe Gly	2095
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Gly Pro Pro Ala Ser Pro	Gly Gly Phe Pro Leu Glu Gly Pro Tyr Ala	2110
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Ala Ala Thr Ala Thr Ala	Val Ser Leu Ala Gln Leu Gly Gly Pro Gly	2125
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Arg Ala Gly Leu Gly Arg	Gln Pro Pro Gly Gly Cys Val Leu Ser Leu	2140
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Gly Leu Leu Asn Pro Val	Ala Val Pro Leu Asp Trp Ala Arg Leu Pro	2160
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Pro Pro Ala Pro Gly Pro	Ser Phe Leu Leu Pro Leu Ala Pro Gly	2175
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Pro Gln Leu Leu Asn Pro	Gly Thr Pro Val Ser Pro Gln Glu Arg Pro	2190
	2195	2200
Pro Pro Tyr Leu Ala Val	Pro Gly His Gly Glu Glu Tyr Pro Val Ala	2205
	2210	2215
		2220

## 15

Gly Ala His Ser Ser Pro Pro Lys Ala Arg Phe Leu Arg Val Pro Ser  
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 Glu His Pro Tyr Leu Thr Pro Ser Pro Glu Ser Pro Glu His Trp Ala  
 2245 2250 2255  
 Ser Pro Ser Pro Pro Ser Leu Ser Asp Trp Ser Glu Ser Thr Pro Ser  
 2260 2265 2270  
 Pro Ala Thr Ala Thr Gly Ala Met Ala Thr Thr Thr Gly Ala Leu Pro  
 2275 2280 2285  
 Ala Gln Pro Leu Pro Leu Ser Val Pro Ser Ser Leu Ala Gln Ala Gln  
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Cys Asp Cys Ala Gly Asp Phe His Lys Lys Ile Gly Leu Phe Cys Cys
      35           40           45
Arg Gly Cys Pro Ala Gly His Tyr Leu Lys Ala Pro Cys Thr Glu Pro
      50           55           60
Cys Gly Asn Ser Thr Cys Leu Val Cys Pro Gln Asp Thr Phe Leu Ala
      65           70           75           80
Trp Glu Asn His His Asn Ser Glu Cys Ala Arg Cys Gln Ala Cys Asp
      85           90           95
Glu Gln Ala Ser Gln Val Ala Leu Glu Asn Cys Ser Ala Val Ala Asp
      100          105          110
Thr Arg Cys Gly Cys Lys Pro Gly Trp Phe Val Glu Cys Gln Val Ser
      115          120          125
Gln Cys Val Ser Ser Ser Pro Phe Tyr Cys Gln Pro Cys Leu Asp Cys
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Gly Ala Leu His Arg His Thr Arg Leu Leu Cys Ser Arg Arg Asp Thr
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Asp Cys Gly Thr Cys Leu Pro Gly Phe Tyr Glu His Gly Asp Gly Cys
      165          170          175
Val Ser Cys Pro Thr Ser Thr Leu Gly Ser Cys Pro Glu Arg Cys Ala
      180          185          190
Ala Val Cys Gly Trp Arg Gln Met Phe Trp Val Gln Val Leu Leu Ala
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Gly Leu Val Val Pro Leu Leu Gly Ala Thr Leu Thr Tyr Thr Tyr
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Arg His Cys Trp Pro His Lys Pro Leu Val Thr Ala Asp Glu Ala Gly
      225          230          235          240
Met Glu Ala Leu Thr Pro Pro Pro Ala Thr His Leu Ser Pro Leu Asp
      245          250          255
Ser Ala His Thr Leu Leu Ala Pro Pro Asp Ser Ser Glu Lys Ile Cys
      260          265          270
Thr Val Gln Leu Val Gly Asn Ser Trp Thr Pro Gly Tyr Pro Glu Thr
      275          280          285
Gln Glu Ala Leu Cys Pro Gln Val Thr Trp Ser Trp Asp Gln Leu Pro
      290          295          300
Ser Arg Ala Leu Gly Pro Ala Ala Ala Pro Thr Leu Ser Pro Glu Ser
      305          310          315          320
Pro Ala Gly Ser Pro Ala Met Met Leu Gln Pro Gly Pro Gln Leu Tyr
      325          330          335
Asp Val Met Asp Ala Val Pro Ala Arg Arg Trp Lys Glu Phe Val Arg
      340          345          350
Thr Leu Gly Leu Arg Glu Ala Glu Ile Glu Ala Val Glu Val Glu Ile
      355          360          365
Gly Arg Phe Arg Asp Gln Gln Tyr Glu Met Leu Lys Arg Trp Arg Gln
      370          375          380
Gln Gln Pro Ala Gly Leu Gly Ala Val Tyr Ala Ala Leu Glu Arg Met
      385          390          395          400

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Gly Leu Asp Gly Cys Val Glu Asp Leu Arg Ser Arg Leu Gln Arg Gly  
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Pro